

AMENDMENTS TO THE CLAIMS:

Please amend claims 1-8, 11-27 and 30-34 as follows.

Please cancel claims 9, 10, 28 and 29 without prejudice.

1. (Currently Amended) A protein-based film comprising a protein network formed by disulfide bonds between the proteins comprising a protein network which has been formed by treating proteins with modified protein in a solution, which protein has been modified by cleaving at least one disulfide bond originally present in said protein by sulfitolysis to obtain free sulfhydryl groups, whereupon an interchange reaction by said free sulfhydryl groups has occurred forming said disulfide bonds between the proteins, ~~characterized in that~~ wherein the pH of said solution was 7 or below.

2. (Currently Amended) A protein-based film of claim 1, ~~characterized in that~~ wherein said film has been formed without heat treatment.

3. (Currently Amended) The protein-based film of claim 1 ~~or 2, characterized in that~~ wherein the amount of free sulfhydryl groups in the total protein of the solution before the interchange reaction was 0.5-60 $\mu\text{mol/g}$ protein.

4. (Currently Amended) The protein-based film of ~~any of the preceding claims,~~ ~~characterized in that~~ claim 1 wherein said modified protein comprises whey protein, such as the soluble fraction or precipitate fraction of modified whey protein or combinations thereof.

5. (Currently Amended) The protein-based film of ~~any of the preceding claims,~~ ~~characterized in that~~ claim 1 wherein said protein has been sulfonated by said sulfitolysis by contacting it with sulfite ion forming agent, such as alkali metal or earth alkali metal sulfite, hydrogen sulfite or metabisulfite, or combinations thereof.

6. (Currently Amended) The protein-based film of ~~any of the preceding claims,~~ ~~characterized in that it~~ claim 1 wherein the film further contains at least one of a

strength-improving agent, such as carbohydrate, such as maltodextrin or other starch hydrolysate;

a plasticizer or lipophilic compound, such as stearate, butter fat as oil or true oil or combinations thereof; and,

a pigment dye, such as titanium oxide, antiadhesive agent, antimicrobial agent or preservative agent.

7. (Currently Amended) The protein-based film of claim 6, ~~characterized in that~~ wherein said film remains substantially intact in 0.1 M HCl (pH 2) at 37 °C for at least 6 hours before dissolving.

8. (Currently Amended) The protein-based film of claim 6, ~~characterized in that~~ wherein said film remains substantially intact in 0.1 M HCl (pH 2) containing 0.1% pepsin at 37 °C for at least 30 minutes before dissolving.

9. (Cancelled)

10. (Cancelled)

11. (Currently Amended) The protein-based film of ~~any of the preceding claims,~~ characterized in that claim 1 wherein said film has been formed on a substance to coat the substance.

12. (Currently Amended) The protein-based film of claim 11, ~~characterized in that~~ wherein said substance is a food product.

13. (Currently Amended) The protein-based film of claim 11, ~~characterized in that~~ wherein said substance is a tablet, granule, pellet or the like containing therapeutically active agent.

14. (Currently Amended) The protein-based film of ~~any of the claims 1-11,~~ characterized in that claim 1 wherein said film has been formed as a capsule shell.

15. (Currently Amended) The protein-based film of ~~any of the claims 1-11,~~ characterized in that claim 1 wherein said film has been formed around lipid, oil, lipophilic compound or combinations thereof to form an emulsion or microcapsule.

16. (Currently Amended) A food product, characterized in that has been coated with or contains substances coated with a film of ~~any of the claims 1-15~~ claim 1.

17. (Currently Amended) A baby's milk formula, characterized in that it contains film of claim 9 6 as an emulsion.

18. (Currently Amended) A pharmaceutical product containing at least one therapeutically active agent, characterized in that has been coated with a film of ~~any of the claims 1-15~~ claim 1.

19. (Currently Amended) A container characterized in that has been coated with a the film of ~~any of the claims 1-15~~ claim 1.

20. (Currently Amended) Method for preparing a protein-based film comprising a protein network formed by disulfide bonds between the proteins, comprising
providing an amount of protein solution containing modified protein, which has been modified by cleaving at least one disulfide bond originally present in said protein by sulfitolysis to obtain free sulfhydryl groups, which are able to cause an interchange reaction for form disulfide bonds between the proteins, and
forming said solution into said protein-based film, ~~characterized in that~~ wherein the pH of said solution is 7 or below.

21. (Currently Amended) The method of claim 20, ~~characterized in~~ comprising forming said film without heat treatment.

22. (Currently Amended) The method of claim 20 ~~or 21~~, characterized in that wherein the amount of the free sulfhydryl groups in the total protein of the solution before the interchange reaction is 0.5-60 $\mu\text{mol/g}$ protein.

23. (Currently Amended) The method of ~~any of the claims 20-22~~, characterized in that claim 20 wherein said protein has been sulfonated in said sulfitolysis by contacting it with sulfite ion forming agent.

24. (Currently Amended) The method of claim 23, ~~characterized in that~~ wherein said sulfite ion forming agent comprises alkali metal or earth alkali metal sulfite, hydrogen sulfite or metabisulfite or combinations thereof.

25. (Currently Amended) The method of claim 24, ~~characterized in that~~ wherein the amount of sulfite used is 0.01-0.06% (w/v).

26. (Currently Amended) The method of ~~any of the claims 20-25~~, characterized in that claim 20 wherein said modified protein comprises whey protein, such as the soluble fraction or precipitate fraction of modified whey protein or combinations thereof.

27. (Currently Amended) The method of ~~any of the claims 20-26~~, characterized in claim 20 including further adding at least one of a plasticizer or lipophilic compound, such as stearate, butter fat as oil or true oil, or combinations thereof;

a strength-improving agent, such as carbohydrate, such as maltodextrin or other starch hydrolysate; and

a pigment dye, such as titanium oxide, antiadhesive agent, antimicrobial agent or preservative agent.

28. (Cancelled)

29. (Cancelled)

30. (Currently Amended) The method of ~~any of the claims 20-29~~, characterized in claim 20 including forming the film on a substance to coat the substance.

31. (Currently Amended) The method of claim 30, ~~characterized in that~~ wherein said substance is a food product.

32. (Currently Amended) The method of claim 30, ~~characterized in that~~ wherein said substance is a tablet, granule, pellet or the like containing therapeutically active agent.

33. (Currently Amended) The method of ~~any of the claims 20-30~~, characterized in claim 20 including forming the film as a capsule shell.

34. (Currently Amended) The method of ~~any of the claims 20-30~~, characterized in claim 20 including forming the film around lipid, oil, lipophilic compound or combinations thereof to form an emulsion or microcapsule.